Listing Program :

```
#include <mega16.h>
#include <delay.h>
#define data_hi     PORTB.0=1
#define data_lo     PORTB.0=0
#define selenoid_on PORTC.1=0 //selenoid memanjang
#define selenoid_of PORTC.1=1 //selenoid memendek
#define lampu_on PORTC.2=1 // lampu hidup
#define lampu_of PORTC.2=0 // lampu mati
#define speaker_on PORTC.0=0 // speaker aktif
#define speaker_of PORTC.0=1 //speaker off
#define sensor_ir1 PIND.0
#define sensor_ir2 PIND.1
#define sensor_pir PIND.2
int i,c,geser,ulang;

unsigned char  F[]={
48,74,74,74,124,0,//a
48,72,72,72,126,0,//d
48,74,74,74,124,0,0,0,//a
60,66,66,60,0,//o
126,2,2,2,0, //r
48,74,74,74,124,0,//a
126,4,2,2,124,0,//n
0,140,146,146,126,0,0, //g
```

```
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
};


unsigned char  G[]={
255,20,34,65,128,0, //k
60,66,66,60,0,//o
```

```
38,73,73,73,50,0,//s
60,66,66,60,0,//o
126,4,2,2,124,0,//n
0,140,146,146,126,0, //g
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
0,0,0,0,0,0, //>
};


void clock()
{
PORTB.1=0; //Clock
PORTB.2=1; //Latch
PORTB.1=1; //Clock
PORTB.2=0; //Latch
delay_us(50);
}

void kosong(){
for (geser=0;geser<50;geser++){

if (sensor_ir2==0)   // selenoid on kunci terkunci
        // sensor inframerah dalam pintu untu  mengunci pintu
```

```
        {
        lampu_on;
        PORTC.6=0;
        break;
        }

if (sensor_pir==1 && PORTC.6==0)   // selenoid on kunci terkunci
         // sensor inframerah dalam pintu untu  mengunci pintu
        {
        PORTC.7=0;
        break;
        }

                for(ulang=0;ulang<3;ulang++){ //speed
                for(i=0;i<28;i++) // i=jumlah kolom dot matrix 1 kolom =7
                 {

                    lampu_of;
                    selenoid_of;
                    c=i-(28-geser);
                    PORTA=~G[c];
                    if(i==1)
                    data_hi;
                    else
                    data_lo;
```

```
                clock();
            }
            }
        }
};



void adaorang(){
for (geser=0;geser<70;geser++){
if (sensor_ir2==0 && PORTC.6==0) // selenoid off kunci terbuka sensor pir
            {

            selenoid_of;
            lampu_of;
            PORTC.6=1;
            delay_ms(300);
            PORTC.7=1;
            break;
            }


if (sensor_ir1==0)
            {
            speaker_on;
```

```
                delay_ms(10);
                speaker_of;
                }

               for(ulang=0;ulang<3;ulang++){ //speed
               for(i=0;i<28;i++) // i=jumlah kolom dot matrix 1 kolom =7
                {



                   lampu_on;
                   selenoid_on;
                   c=i-(28-geser);
                   PORTA=~F[c];
                   if(i==1)
                   data_hi;
                   else
                   data_lo;
                   clock();
               }
               }
          }

};

void main(void)
```

```
{
DDRB=0xFF;// Driver Baris
PORTB=0x00;
DDRA=0xFF;// Driver Kolom
PORTA=0x00;
DDRC=0xFF;
PORTC=0xFF;
DDRD=0x00;
PORTD=0x03;

while(1)
{
if (PORTC.7==0)
      {
      adaorang();
      }

if (PORTC.7==1)
      {
      kosong();
      }
}
};
```